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20 April 1962

R&E Log No. 62-1989
Copy Number 18

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE AIR FORCE (R&D)

SUBJECT: MIDAS Development Plan

I am in general agreement with the revised MIDAS Development Plan submitted by your memorandum of 10 April. The most important reservation which I have concerns the planning for the "Developmental Test Series" (Series 4).

This arises because of the probable lack of capability of the Series 4 payload against low-radiance targets, combined with the increasing probability that this is the type of target which would confront MIDAS in the era of its deployment. A recent measurement on TITAN II indicates radiance of about 200-300kw per steradian in the MIDAS band. Since the design of the Series 4 payload is based on a minimum 300kw/steradian target, it is probable that the MIDAS performance would be only marginal against advanced ICBM designs.

It is not known precisely that the U.S.S.R. will use low-radiance fuels on its second generation missile, but indications are that the fuel has been changed from that used on the first generation missile, and logic and military utility point to the use of storable propellants, similar to that being used on TITAN II. Solid propellant missiles of the MINUTEMAN type would also be poorly detected.

When the schedule in your development plan is examined, it is noted that twelve Series 4 launches are planned, beginning in June 1963, and culminating in December 1964, with six launches in three months to provide a multi-satellite test. Obviously, this series is being designed as an operational prototype, similar to the old Series 4a and 4b in the earlier development program. The Series 5 payload, designed to be effective against low-radiance targets, is not scheduled to fly until September 1966.

Although the foregoing conclusions may be modified by future intelligence reports and test results, it seems dubious at this time that a deployment decision would be made on the basis of the capability planned for Series 4 payloads.

Hence, it is important that the Series 4 flights be regarded as, and treated as, R&D flights designed to arrive at a capability against low-radiance targets as soon as possible, and not as a pre-production prototype. Such a plan would intersperse flights carrying advanced payload components among those carrying the presently planned Series 4 payloads, which should

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still go forward because they will give some information on IR background and detection, as well as help to answer the very serious reliability question.

It is requested, therefore, that the Air Force make an immediate examination to determine the most logical and expeditious way to introduce an improved payload into some of the flight tests in the Series 4 program, the payload design being aimed at the detection of low-radiance targets. The examination shall include consideration of tests and measurements necessary for the establishment of reasonable design parameters. The results of the study, including the effects on Series 4 flight tests, shall be submitted to me for approval. In the meantime, fabrication of the early Series 4 vehicles is authorized in accordance with the development plan, but final approval of the Series 4 flight test program will be withheld pending the submission of the requested information.

In accordance with the above reasoning, in which Series 4 is regarded as an R&D program laid out to establish a capability against low-radiance targets, no work at Ottumwa, Iowa, to establish a Satellite Test Center is authorized at this time.

With respect to funding, a final determination of the combined fiscal 1962-63 level (set at \$334 million in your development plan) is deferred pending the submission of the study. However, to avoid a slow down in the present program, program approval is given as follows for the release of \$18.1 million of FY 1962 funds, as you have requested.

<u>Millions</u>				
<u>Project No.</u>	<u>Project Title</u>	<u>Programmed (Requested)</u>	<u>Funds Prev. Approved</u>	<u>Total Approved</u>
239A	MIDAS	\$190	\$146	\$18.1

The above action has been coordinated with ASD(Comptroller) as to the availability of fund resources and for amendment of listings of program approved for financing.

HAROLD BROWN

cc: ASD(Compt)
Dir., ARPA
Dir. Admin. & Mgmt.

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